

# SOCIAL IMPERATIVES OF ENVIRONMENT MANAGEMENT

By Akmal Husain

NATURE and mankind constitute an inseparable part of the life support system on earth. This delicate balance is being increasingly threatened with the rapid pace of industrialisation and all round modernisation, leading to a variety of health and ecological problems.

Long term environmental problems include occurrence of acid rain, extensive contamination of surface and ground water, uncontrollable waste site hazards, global warming due to greenhouse effect as well as erosion of the ozone layer in the stratosphere.

Small wonder, this has become a subject of major concern for environmentalists the world over.

only now that a need is being felt to initiate programmes that demand active people's involvement at the grassroots level. Without effective popularisation and group involvement, research findings, journalistic works and legal enactments would remain in the confines of books and treatises without making any significant contribution towards solving real problems.

Today, the segment of the population most vulnerable to environmental degradation are the urbanites. Most big Indian cities like Bombay, Calcutta, Kanpur and Ahmedabad were not planned to accommodate the kind of influx from villages witnessed in the past few years. Lack of public amenities, poor hygienic conditions and rise in pollution levels have further aggravated the situation. Almost every year, particularly during the monsoons, epidemics break out in the slums of major cities.

Thus, no city dweller can afford to remain totally indifferent to the quality of the environment surrounding him.

Even the extent to which he would get fresh air and water, depends on his own interaction with the natural environment. But then, as it has often been observed, while some people are concerned about the physical aspects of environmental degradation, not many could care much about its social implications.

It is here that the media has a very prominent role to play. Through timely articles in the press and programmes on radio and television, public awareness can be built up on how to cope with the problem from time to time. Town planners too need to be conscious of their responsibilities.

As for industrial houses, top priority needs to be placed on adopting safety norms as per the standards set by local Environmental Control Boards.

New industries should be located away from populated areas while running units may be shifted away from residential areas to preferably, industrial estates. As far as possible, provision has to be made for

supply of clean drinking water as well as an efficient drainage system.

In residential areas, environmentalists are advising the construction of well-covered drainage and sewerage systems as well as planting trees alongside roads and pavements which can serve as filters to absorb gaseous pollutants.

Plants suitable for such purpose are siser, cassia, guava and blackberry, besides vegetables like cucumber, brinjal, castor, wild apple, walnut acacia.

Tamarind and mango plants are also capable of absorbing dust and gaseous particles from its surroundings. Of late, it has been noticed that the poplar tree has the potential to absorb oxides of nitrogen and sulphur (the precursors of acid rain) from the polluted air.

The significance of social forestry in inhabited and industrial areas cannot be underestimated, considering that an average 50-year-old tree serves mankind by worth over

Rs two million in terms of cleaning up the environment and its material value. There are other considerations as well.

For instance, (a) a peepal tree replace about 2,000 kilos of polluted air by providing about 1,700 kilos of oxygen during its lifetime; (b) one hectare of forest land consumes three metric tonnes of polluted air and provides about two million tonnes of oxygen; (c) one medium-sized tree can take carbon dioxide given out by two families (of six) while providing enough oxygen for them; and (d) towns with tree lined avenues have four to five times less dust particles in the atmosphere than those without.

Sadly, people who are even aware of all this do not take environment protection measures seriously. The attitude generally is to live by the day and forget about tomorrow.

This is only denying future generations of a safe and healthy life on this planet. — PTI Feature.



A day's collection of fuelwood — a sight common in rural and semi-urban areas of all developing countries. —Photo: ILO

## Chemicals Giant Considers the Environment

by David Welsh

AS concern grows over the effects of man's activities on the globe and its atmosphere, one of the world's biggest chemicals firms has announced its own far reaching plans to protect the environment from industrial waste.

Imperial Chemical Industries (ICI) is to spend £1000 million over the next five years halving undesirable wastes from its plants worldwide. In one of the most sweeping statements of intention ever announced by any British company, group chairman Sir Denis Henderson has announced that all new factories will be built to the most demanding environmental standards, wherever the project may be located.

"Improving ICI's environmental performance is a top priority for all of us" he said in a letter to employees, pointing out that manufacturers were increasingly judged on their record in this area. "Good environmental performance is no longer optional," he added. "It is essential if ICI is to continue as a leading international chemicals company into the next century."

dition in this way from 1991 to 95.

Sir Denis said the organisation would do much more than in the past to use less energy and resources, reduce waste and recycle used materials. Plants that could not meet the new targets would face closure.

"These demanding objectives must not be seen as a once and for all statement of our goals," he continued. "One clear lesson we have learned is that environmental performance is a matter of continuous improvement. With the elapse of time and with technology opening up new possibilities, we will have to set ourselves still tougher targets in the future."

ICI is investing heavily in biotechnology to neutralise waste and plans to recycle CFCs (chlorofluorocarbons) and plastics. It has already greatly improved its energy efficiency. Although, across the group, output has doubled since the early 1970s, both energy consumption and emissions of the greenhouse gas, carbon dioxide, have been cut by 15%.

Searching Scrutiny In the United Kingdom, ICI's output is up by more than half over this period, yet energy consumption has been reduced by 27%. The group has introduced comprehensive free recovery services for Europe's industrial users of CFCs, the man-made chemicals blamed for ozone depletion in the upper atmosphere. It has

also started a recycling scheme for refrigerant recovered from domestic fridges in Britain.

ICI's scientific research on the environmental impact of chemical products and wastes centres on the group environmental laboratory at Brixham, in southwest England, where all of its products, from dyes to detergents and plastics to pesticides, undergo searching scrutiny.

In particular, new products are tested for their persistence or tendency to avoid decomposition, their capacity for bio-accumulation or build-up in people's bodies, and their toxicity. Waste studies include using advanced computer models of rivers, estuaries and the sea that accurately simulate dispersion and degradation of effluents.

Claimed to be one of the most versatile industrial research centres in its field, it has a high reputation for its work on freshwater and marine environments, and for recent atmospheric research that will soon include computer models of air quality near to chemical plants.

The group recently doubled the size of the centre under a £3 million expansion plan. It now contains 16 laboratories that can each be adjusted to mimic almost any environmental situation. They undertake

both research for ICI itself and contract projects for other companies.

### Non-Animal Testing

At the company's central toxicology laboratory near Manchester, northwest England, 400 staff carry out systematic testing of existing chemicals and new products to ensure safety not only during manufacture but also for customers and the general public.

The laboratory specialises in developing new testing methods that do not rely on animals.

In addition, an environmental sciences unit near London is the research centre for ICI's agrochemicals and seeds businesses.

Underlining its commitment to protecting the environment, the company has just opened the world's first commercial plant for the manufacture of an ozone-friendly refrigerant, at Runcorn in the northwest. Known as KLEA 134a, it is intended for use in refrigeration and air-conditioning systems, and is the outcome of a £100 million ICI investment in research on alternatives to CFCs.

The £30 million KLEA 134a production plant, built for ICI's chemicals and polymers company, was completed ahead of schedule in just 12 months and an even larger plant is now being designed for a site in Louisiana, United States. (LPS)

## Third World Lags In Ozone Control

AUSTRALIA is making a quick start towards the elimination of chlorofluorocarbons (CFCs) in manufacturing processes and products before the due date of year 2000, stipulated under international agreements.

Australia hopes to achieve complete elimination by 1997. In four years Australia has halved the use of CFCs, in itself an achievement.

CFCs, it has now been established, are the main cause for the depletion of ozone layer. Industrial nations have been mainly responsible for increasing emissions of CFCs into the atmosphere, causing the destruction of the earth's ozone umbrella, against the lethal ultraviolet rays of the sun.

In 1985 the Vienna Convention was signed by several countries for the protection of the ozone layer. In 1987 the Montreal Protocol was signed by around 60 countries to phase out ozone depleting substances, up to 50 per cent by the year 2000.

Among the countries in the Asia-Pacific region that have ratified the Montreal Protocol are Sri Lanka, Australia, New Zealand, Singapore, Fiji, the Maldives, Japan and Thailand.

But many nations were dissatisfied with this pace for the reduction in the use of CFCs. In 1989 in London the reduction rate was raised to 85 per cent by 2000, leading hopefully to complete elimination.

While the rich developed nations have ratified the Montreal Protocol, developing na-

tions are lagging behind, due to constraints of finance.

Australia has real worries in this field. There has been a noticeable increase in the number of skin cancer cases among her sun-loving people. Australia has the highest rate of skin cancer in the world.

Skin cancer and cataracts are two of the dire effects of the bombardment of the earth by ultraviolet rays of the sun, following the thinning of the

ozone layer. A one per cent drop in ozone would lead to a 4-5 per cent increase in skin cancer, according to a report on the State of the Environment in the region prepared by the UN Economic and Social commission for Asia and Pacific.

In the lower latitudes ozone depletion has been found to be greater than 5 per cent. Already decreases have been noted over New Zealand and Australia.

Australia meanwhile has passed the Ozone Protection Act which bans products and manufacturing processes which use ozone-depleting substances. This includes products like aerosol cans, polystyrene packaging, de-

greasing and cleaning agents, solvents in the electronics industry, etc.

Australia also advocates recycling, recovery and reprocessing of CFCs and halons (fire depressants) and improved technological designs to prevent the CFCs from escaping into the atmosphere.

The alarm was set off in the mid-80s when a hole in the ozone layer as big as North America was found in Antarc-

### Developing countries have lagged behind in ratifying the Montreal Protocol due to constraints of finance.

by Mallika Wanigasundara

several developing nations at a meeting in New Delhi in 1990. A fund US\$ 160 million has been set up.

Unless developing countries are brought into the protection program, it could become ineffective. It is estimated by experts that the developing countries could emit enough CFCs to keep the Antarctic hole going indefinitely.

UNEP reported in 1986 that nations in the Asia-Pacific region used 149,072 tons of CFCs a year. Total production of all developing countries is in the region of 108 kilo-tons annually, with India and China the big users.

Substitutes for CFCs and halons are being tried out around the world. Butane, propane and cheap hydrocarbons have been tried as effective substitutes for aerosol cans. Carbon dioxide has been used to blow bubbles in polystyrene and water based cleaners are being tried out. Scientists say ammonia-based technology can be used in air-conditioning systems. In the next few years it is likely that a new coolant will be found for refrigerators.

A small Australian company has invented a CFCs recovery and recycling machine, which prevents CFCs from escaping into the atmosphere when air-conditioners are serviced. It extracts the CFC liquid, purifies it and then it can be put back.

Most of these control strategies are believed by scientists to be cost effective, thus bearing out the argument that environmentally sound development can be economically sound too.

Taxation and now famine are pushing thousands of Sudanese into cutting down the country's precious acacia trees for charcoal instead of sustainably harvesting them for valuable gum arabic exports.

It is a dramatic example of how poverty can cause environmental damage which itself exacerbates poverty, and the way short-term needs are met at the expense of long-term benefits.

As Khartoum and Western governments argue over the politics and organisation of relief for a famine which a Save the Children Fund official has said may be "the worst this century", hundreds of thousands of people are abandoning the drought-stricken regions of Kordofan and Darfur. Autumn rains have failed for the second year in a row, and as the people flee, they chop acacias and other trees in the desperate hope that they will be able to sell firewood and buy food.

But the thorny acacias, acacia senegal and acacia seyal, are the source of gum arabic, the country's third biggest export earner: US\$ 75 million in 1988/89 according to the World Bank.

Sudan is the largest producer of gum arabic, which is used by Western manufacturers of confectionery and beverages, pharmaceuticals, and artistic, photographic and lithographic materials.

Known locally as "hashab" and "lalah", acacias grow in a belt covering one-fifth of Africa's largest country, and are an integral part of the

## Cutting Rather Than Cultivation Threatens Sudan's Gum Exports

by Berhane Woldegabriel

cropping system for many of the region's three million peasants and pastoralists.

Its leaves and pods provide fodder for camels, sheep and goats. Its deep roots help reduce soil erosion and water run-off, acting as a buffer against desertification. The tree also fixes nitrogen in the soil, which encourages the growth of grass for livestock.

The destruction of the acacia tree stems basically from high export taxes and low producer prices, which are fixed by the government.

The London-based International Institute for Environment and Development (IIED) says that producer prices have not been raised since 1987-88. Gum arabic sales now account for only

10% of farm incomes in the areas in which the tree grows, compared with 50% in the 1970s.

Harvesting gum arabic is labour intensive and there are labour and transport shortages in the region. The net result is that farmers can make more money from turning acacias into easily sellable charcoal than from producing gum. In

addition, currency devaluation, which has reduced cash crop export earnings, and general economic deterioration have sent prices of food and other essentials rocketing.

Gum arabic from the acacia senegal is particularly in demand for specialist uses that require a very high quality gum. But as a result of interruptions in supply and erratic quality, manufacturers have been turning increasingly to substitutes, mostly made in the US from corn starch.

IIED estimates that Sudan in recent years may have lost up to 70% of its share of the total emulsifier/gum market.

Worried by the loss of export earnings and by the effect of a decline of such an important resource on people in the Gum Arabic Belt, the government asked the IIED and Khartoum University's Institute of Environmental Studies in 1988 to come up with ideas for rescuing the industry.

They found that rehabilitation was bankable, and the Kuwait-based Arab Fund for Economic and Social Development, which paid for the study, showed interest in putting up the money.

But politics intervened. When Sudan's military regime backed Iraq in the recent Gulf crisis, the Kuwaitis shelved their plans for assistance.

According to an official in the Ministry of Planning, there also appears to have been disagreement between the government and the IIED.

## Maize Brewing Swallows up the Forest

There's no harm in a drink, according to many of the 1.2 million people in Tanzania's Iringa region. Yes, there is, say environmentalists, because it contributes to deforestation and perhaps to climate change.

This apparently extravagant claim is made as a result of concern over the effects of the widespread brewing of "komoni" from maize left unsold because of marketing bottlenecks, reports LAWRENCE KILIMWIKO in Dar es Salaam.

LAST year 568,000 tons of maize were produced in the region, but only 80,000 tons were sold in the government-controlled co-operative unions of the National Milling Corporation. One village chairman explains why: "Last year we were forced to sell a 90 kg (200 lb) bag of maize for only 400 shillings (US\$2) against the official price of 1,600 shillings (US\$8) because the marketing board had no money, and co-operative union officials had stolen the money intended for maize purchase."

Tree loss is so severe that some environmental activists claim that it is a factor in the reduced rainfall experienced in parts of the region in the last decade.

Komoni brewing is by no means the only cause of deforestation, but its contribution highlights the complex interactions between many small individual activities, such as having a drink, and the problems of environmental degradation. /PANOS

### Charcoal Exports Puzzle Tree-conscious Ghanaians

Many Ghanaians were surprised when they heard that the Export Promotion Council had approved the export of charcoal, writes NANA FREDDUA AGYEMAN from Accra, because for years there has been a strong official campaign against tree-felling.

One exporter, Fauzal Azim Enterprise, proudly announced that it had earned \$7.4 million from the sale of 500 metric tonnes of charcoal to Saudi Arabia in the first quarter of 1990.

Another exporter said he felled nim trees and what he described as other less-important species—but nim seedlings have been widely used in the national tree-planting programme.

A spokesman justified the exports as environmentally sound on the ground that only dead wood-pieces and cut-offs were burnt to produce charcoal.

But Friends of the Earth-Ghana doubted whether the Export Council was capable of ensuring that trees were not being cut for charcoal: "The most appropriate thing to do in the state of ecological demise is to ban exports." The Spectator newspaper also called on the government to stop the Export Council from causing further damage to forests.

In response to the pressure, National Energy Adviser Dr Wireko Brobby announced that the National Energy Board would issue export licences for charcoal only after satisfying itself that the actual burning was done only from dead wood. /PANOS

